

1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{5}{7} + \frac{4}{3}x \geq \frac{10}{8}x - \frac{9}{9}$$

- A. $(-\infty, a]$, where $a \in [-21, -20.25]$
 - B. $[a, \infty)$, where $a \in [-22.5, -17.25]$
 - C. $[a, \infty)$, where $a \in [18.75, 22.5]$
 - D. $(-\infty, a]$, where $a \in [18, 23.25]$
 - E. None of the above.
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2. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

More than 9 units from the number 4.

- A. $(-\infty, -5] \cup [13, \infty)$
 - B. $(-5, 13)$
 - C. $[-5, 13]$
 - D. $(-\infty, -5) \cup (13, \infty)$
 - E. None of the above
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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$5 + 6x > 8x \text{ or } 8 + 4x < 5x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-11.25, -7.5]$ and $b \in [-6.75, 0]$
- B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-10.5, -3.75]$ and $b \in [-3.75, -0.75]$
- C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.75, 4.5]$ and $b \in [5.25, 12.75]$
- D. $(-\infty, a] \cup [b, \infty)$, where $a \in [2.25, 4.5]$ and $b \in [3.75, 9.75]$

E. $(-\infty, \infty)$

4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 - 9x < \frac{-40x - 8}{6} \leq 5 - 7x$$

- A. $(a, b]$, where $a \in [-3.97, -0.45]$ and $b \in [18, 20.25]$
B. $(-\infty, a] \cup (b, \infty)$, where $a \in [-3.52, -0.82]$ and $b \in [16.5, 25.5]$
C. $[a, b)$, where $a \in [-3.45, 0.22]$ and $b \in [18, 21.75]$
D. $(-\infty, a) \cup [b, \infty)$, where $a \in [-4.65, -1.05]$ and $b \in [16.5, 26.25]$
E. None of the above.
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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7x + 3 \leq 6x + 7$$

- A. $[a, \infty)$, where $a \in [0.05, 0.46]$
B. $(-\infty, a]$, where $a \in [-0.48, -0.29]$
C. $[a, \infty)$, where $a \in [-0.55, -0.18]$
D. $(-\infty, a]$, where $a \in [-0.22, 0.9]$
E. None of the above.
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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3 + 9x > 10x \text{ or } 4 + 9x < 12x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.25, -1.5]$ and $b \in [-0.75, 2.25]$
B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-4.95, -1.95]$ and $b \in [0.75, 2.25]$

- C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-1.72, -0.22]$ and $b \in [1.5, 6.75]$
D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-1.5, 6]$ and $b \in [1.5, 12]$
E. $(-\infty, \infty)$
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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 + 8x \leq \frac{50x + 4}{6} < 6 + 6x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [-28.5, -22.5]$ and $b \in [0.75, 3.75]$
B. $[a, b)$, where $a \in [-32.25, -24]$ and $b \in [-1.5, 3]$
C. $(-\infty, a] \cup (b, \infty)$, where $a \in [-26.25, -24.75]$ and $b \in [-2.25, 3.75]$
D. $(a, b]$, where $a \in [-27, -22.5]$ and $b \in [-0.75, 6]$
E. None of the above.
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8. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

Less than 4 units from the number 10.

- A. $(6, 14)$
B. $[6, 14]$
C. $(-\infty, 6] \cup [14, \infty)$
D. $(-\infty, 6) \cup (14, \infty)$
E. None of the above
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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{6}{5} - \frac{7}{9}x < \frac{-5}{8}x + \frac{9}{3}$$

- A. (a, ∞) , where $a \in [9.75, 15]$
 - B. (a, ∞) , where $a \in [-12, -8.25]$
 - C. $(-\infty, a)$, where $a \in [8.25, 13.5]$
 - D. $(-\infty, a)$, where $a \in [-13.5, -9.75]$
 - E. None of the above.
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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-10x - 9 < -7x - 8$$

- A. (a, ∞) , where $a \in [-0.17, 0.68]$
 - B. $(-\infty, a)$, where $a \in [0.1, 1.4]$
 - C. $(-\infty, a)$, where $a \in [-0.7, -0.2]$
 - D. (a, ∞) , where $a \in [-0.48, -0.25]$
 - E. None of the above.
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